

HIDA lecture: What is Health? Taking a Non Dualist Multi-Scale Approach to Studying Adaptive Immune Interactions

Wednesday 21 September 2022 09:00 (1 hour)

The reductive approach which sees health as the rejection of the other - be it cancer or pathogens is false. As we learn more about the individual characteristics of cells in the body and the variable forms of immune responses it becomes ever clearer that we need a new paradigm of study one that considers open systems of interactions across scales of biology rather than defining sharp borders of good and bad health outcomes. The immune system is comprised of multivariate B cells and T cells. To develop these repertoires they must first be tested for some level of activity. They are then activated during an immune response. Most commonly this secondary activation is seen to be by pathogens. However, it is becoming ever clearer that these are not the only events that interest or influence are immune repertoires and their role in promoting health. The immune system also helps to cultivate and moderate the commensal bacteria in our gut and is a key factor in the modulation of cancer and autoimmunity. Setting goals and borders for the immune system is thus not an effective way to understand what it is doing. Instead we should study as far as we can the processes of immune interaction and change. In this lecture I will present our attempts to characterize how the genome of B cell receptors encodes the potential for change in the adaptive immune system and how this is translated into actual patterns of diversity, implemented in a specific immune responses. I hope these ideas and findings will lead to further questions and help spark new conversations and research projects.

This lecture will take place via Zoom.

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Target audience

Learning target

Previous experience

Maximum number of participants

Presenter: Prof. HERSHBERG, Uri (Chair of the Center for Biophysics and Quantitative Biology, University of Haifa, Israel)

Session Classification: General